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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/682,385	08/27/2001	Ji Zhang	CISCP229/340	2103

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EXAMINER

VO, TUNG T

ART UNIT	PAPER NUMBER
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2613

DATE MAILED: 04/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/682,385

Applicant(s)

ZHANG ET AL.

Examiner

Tung Vo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-29 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-29 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Nachtergaele et al. (US 5,978,509).

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Re claims 1, 17, 21, 24 and 27, Nachtergaele discloses a computer system comprises a readable medium including instructions (fig. 4) for processing a compressed bitstream comprising video data, the system comprising (fig. 5):

means (42 of fig. 5) for carrying out the step of parsing a portion of the compressed bitstream before motion compensation on video data included in the portion 43, 43' and MV of fig. 5);

means (46 of fig. 5; fig. 8b) for carrying out the step of obtaining motion information related to the video data, the motion information comprising a set of motion vectors (58, 60, 62 of fig. 8b);

means (60 of fig. 8b) for identifying a reference sub-region (Pedge, $P_x(i,j)$ fig. 8a) based on at least the motion information (MVx, Mvy of fig. 8a);

means (44e of fig. 5) for storing a reference sub-region identified by the motion information in an on-chip memory(44, 44e of fig. 5, see also 33 of fig. 4) before performing motion compensation using the set of motion vectors (MV of fig. 8a),

means (46 of fig. 5) for performing motion compensation on the video data using the reference sub-region stored on the on-chip memory (fig. 6).

Re claim 2, Nachtergaele further discloses retrieving the reference sub-region identified by the motion information from an off-chip memory (40 of fig. 4; col. 7, lines 48-65).

Re claim 3, Nachtergaele further discloses wherein retrieving the reference sub-region in the off-chip memory comprises performing a direct memory access (col. 7, lines 58-65; col. 7, lines 56-60) based on the motion vector (MV).

Re claim 4, Nachtergaele further discloses wherein the direct memory access includes accessing the off chip memory source (32, CBUS, of fig. 4).

Re claim 5, Nachtergaele further discloses the step of storing the motion information in the on-chip memory (fig. 8b, 44e of fig. 5).

Re claim 6, Nachtergaele further disclose wherein obtaining motion information comprises extracting and decoding the set of motion vectors from the compressed bitstream (42 of fig. 5).

Re claim 7, Nachtergaele further discloses wherein the time that the reference sub-region is stored in the on-chip memory (44 of fig. 5) before performing motion compensation using the set of motion vectors (46 of fig. 5) comprises the time required for to complete a direct memory access to store the reference sub-region in the on-chip memory (36, CBUS, MBUS, CPU 32 of fig. 4, e.g. controlling the time required).

Re claim 8, Nachtergaele further discloses wherein the time that the reference sub-region is stored in the on-chip memory (44 of fig. 5) before performing motion compensation (46 of fig. 5) using the set of motion vectors comprises an estimated time for a processor to reconstruct one macroblock.

Re claim 9, Nachtergaele further discloses wherein storing the reference sub-region further comprises storing multiple reference sub-regions (33 of fig. 4; and 44, 44e of fig. 5).

Re claim 10, Nachtergaele further discloses wherein the multiple reference sub-regions are included in a reference window (Pedge of fig. 8a), the reference window comprising a set of reference window sub-regions ($P_x(I_j)$ of fig. 8a, see also fig. 7).

Re claims 11 and 23, Nachtergaele further discloses the step of creating the reference window comprising the set of reference window sub-regions (Pedge of fig. 8a), the set of reference window sub-regions including the reference sub-region identified by the set of motion

vectors (55, 58, 60, 62 of fig. 8b); and storing the set of reference window sub-regions in the first memory source (44e of fig. 8b).

Re claims 12-13, 19-20, Nachtergaele further discloses wherein the reference window has a trapezoidal array (rectangular array, fig. 7), wherein the motion information is the upper left window in the trapezoidal array (the motion vector processor (46 of fig. 5) determines the motion vector of the macroblock from the left to the right, therefore, each macroblock has its own motion vector; Mvx , Mvy of $Px(I,j)$ of fig. 8a).

Re claim 14, Nachtergaele further discloses wherein the video data comprises a macroblock (fig. 7).

Re claim 15, Nachtergaele further discloses the step of converting the motion information to an DMA instruction (CPU 32 of fig. 4).

Re claim 16, Nachtergaele further discloses the step of obtaining motion information (46e 46f of fig. 6), from a second compressed bitstream and performing motion compensation on video data included in the second compressed bitstream (Pblock, 43 of fig. 5, Pblock 43' of fig. 5).

Re claim 22, Nachtergaele further discloses means for extracting and decoding the motion information from the compressed bitstream (42 of fig. 5).

Re claims 25- 30, Nachtergaele further discloses DMA (33 of fig. 4) that is considered on-chip memory, which forms a part of a processor (32 of fig. 4), the processor (32 of fig. 4) perform the motion compensation (fig. 6) and motion vectors (fig. 8b), the processor (32 of fig. 4) connected to the on-chip memory (33 of fig. 3) by CBUS and to the off-chip memory (40 of fig. 4) by MBUS.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.


Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung Vo whose telephone number is 571-272-7340. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris. Kelley can be reached on 571-272-7331. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tung Vo
Primary Examiner
Art Unit 2613